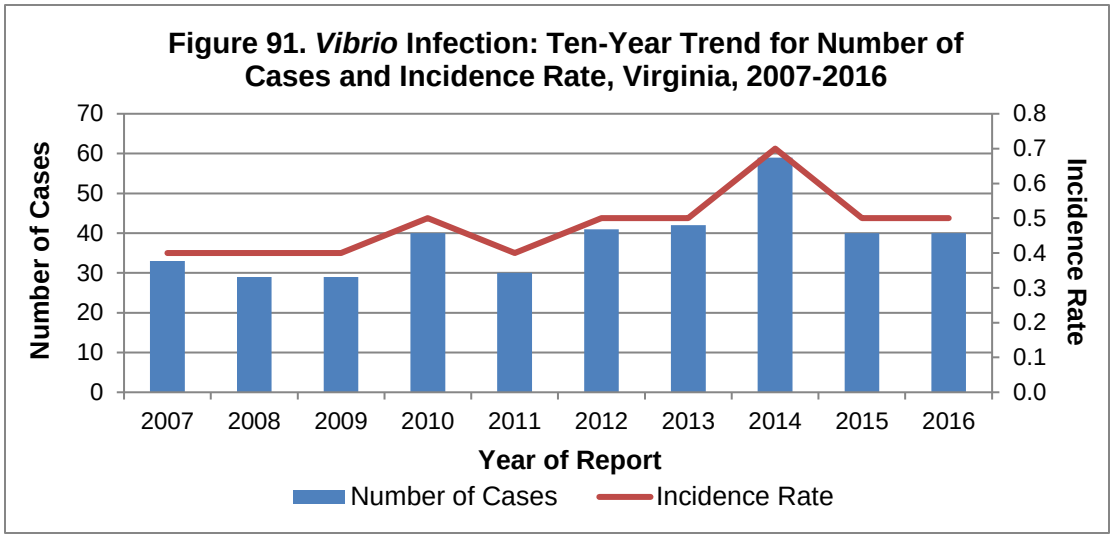
Vibrio Infection

Agent: *Vibrio* (bacteria)
Mode of Transmission: Gastroenteritis caused by *Vibrio* is usually related to the consumption of raw or undercooked seafood, particularly shellfish. Wound infections occur when saltwater carrying the *Vibrio* bacteria enters the body through a break in the skin, usually from brackish (i.e., somewhat salty) waters or from occupational injuries (e.g., among fishermen).
Signs/Symptoms: Symptoms associated with *Vibrio* infection include diarrhea (gastrointestinal infection), wound infection, and septicemia (bloodstream infection). Diarrheal illness is most common and includes watery stools and abdominal cramping. Low-grade fever, headache, and chills are seen in half of those ill with diarrheal illness, while 30% of those with diarrheal illness will experience vomiting. Wound infection is usually severe in those who have liver disease or weakened immune systems. Among those infected with *V. vulnificus*, approximately 50% of patients with primary septicemia die from the infection.
Prevention: Seafood should be cooked adequately and should be refrigerated. Avoid exposing open wounds to salt or brackish water. Abrasions suffered by those swimming in salt or brackish water should be washed with soap and clean water. Most people are considered susceptible, especially those with liver disease, decreased gastric acidity, diabetes, peptic ulcers, or weakened immune systems. People in high risk groups should refrain from eating raw or undercooked seafood.
Other Important Information: Marine coastal areas are the natural habitat of *Vibrio*. During the cold season, organisms are found in marine silt; during the warm season, they are found free in coastal waters and in fish and shellfish. Most *Vibrio* infections occur during summer and fall months, when levels of bacteria in brackish waters and estuaries are highest.

***Vibrio* Infection: 2016 Data Summary**	
Number of Cases:	40
5-Year Average Number of Cases:	42.4
% Change from 5-Year Average:	-6%
Incidence Rate per 100,000:	0.5

During 2016, 40 cases of *Vibrio* infection were reported in Virginia. This is the same number of cases that were reported in 2015, and is slightly lower than the five-year average of 42.4 cases per year (Figure 91). The statewide incidence rate of *Vibrio* infection in 2016 was 0.5 per 100,000.



Species were identified for all but one *Vibrio* infection in 2016. *V. vulnificus* accounted for 43% of infections, making it the most commonly identified species in 2016. In a change from previous years, more wound infections (14 cases) than gastrointestinal illnesss (12 cases) occurred for all species. Other illnesses included 4 ear infections, 9 bloodstream infections, and 1 urinary tract infection (Table 15).

Table 15. *Vibrio* Infections by Species and Specimen Source, 2016

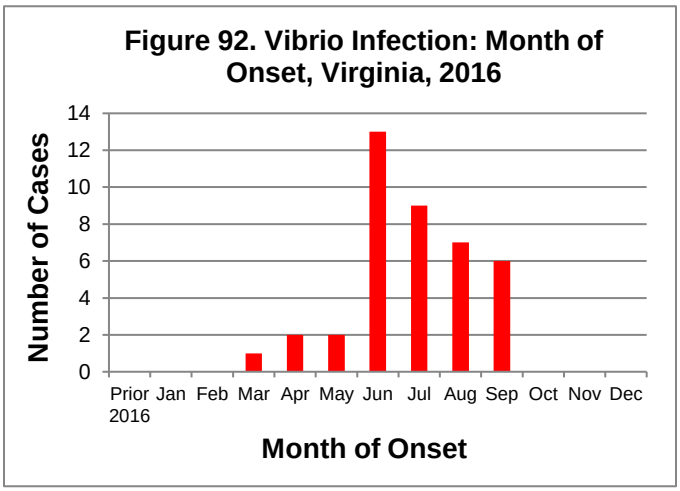
***Vibrio* species (number of cases)**	***Vibrio* Specimen Source***				
	Wound	**Stool**	**Ear**	**Blood**	**Urine**
V. vulnificus (17)	8	0	1	7	1
V. parahaemolyticus (14)	4	8	1	1	0
V. alginolyticus (3)	1	0	2	0	0
V. mimicus (2)	0	1	0	1	0
Vibrio cholerae, non-O1, non-O139 (2)	1	1	0	0	0
V. fluvialis (1)	0	1	0	0	0
Vibrio, unspeciated (1)	0	1	0	0	0

*The total number of positive specimens is larger than the total number of *Vibrio* cases because multiple specimen types have been collected from a single patient.

The largest number of *Vibrio* infections (18 cases) occurred among persons aged 60 years and older, with an incidence rate of 1.1 per 100,000. This was followed by the 50-59 year age group (8 cases, 0.7 per 100,000) and 40-49 year age group (6 cases, 0.5 per 100,000). Few cases were reported in the 20-29 year (2 cases), and 30-39 year (1 case) age groups. Among children, the highest number of cases was seen in the 1-9 year age group, with 5 cases. No cases were reported in the 10-19 year age group or among infants.

Race information was not available for 32% of cases. Among those with a known race, the number of cases was higher among the white population compared to the black population; however, both groups had similar incidence rates of 0.3 per 100,000. In Virginia, *Vibrio* infections typically affect males more often than females. This was unchanged in 2016, with 75% of cases reported among males.

As in previous years, the eastern region had both the highest number of cases and the highest incidence rate (23 cases, 1.2 per 100,000). The central region had the second highest incidence rate (10 cases, 0.7 per 100,000), while the northwest region had the third highest incidence rate (4 cases, 0.3 per 100,000). The northern region had three cases, and no cases were reported in the southwest region. The map below illustrates the clustering of reported cases along Virginia's coastal region and major rivers. Occurrence of illness showed a seasonal pattern, with onset being reported in warmer months (Figure 92). Onset peaked in June with 13 reported cases.



During 2016, 18 (45%) *Vibrio* infections required hospitalization and one person died as a result of the infection. The death occurred in an adult male infected with *Vibrio vulnificus*. No outbreaks attributed to *Vibrio* infection were reported in Virginia in 2016.

Vibrio Infection, Incidence Rate by Locality
Virginia, 2016